

specifies the washing additive to be from the selected group. There is no recitation that the washing additive components be permanent as it may happen that sometimes components may get used up or chemically changed. That is, all claim 24 requires is that at some instant in time (the duration of the instant being inconsequential), there is a washing liquor composition of claim 21 that includes, *inter alia*, UV light as the wash additive. Now it is also well established by elementary quantum physics that UV light, as with any light, has substance and mass. It is an elementary principle of DeBroglie's Wave Particle Duality Theory. Light has particulate and waveform duality. Accordingly, it is quite possible that at any instance in time, there may be a wash liquor composition of claim 24 having UV light in the precisely claimed manner. That the fact that the wash liquor composition can be subjected to UV light as a process step does not in any fashion detract from the structural claim of a wash liquor composition of claim 24 including UV light. Therefore, because it is possible to have a wash liquor composition of claim 24 to include UV light, the claim is clear and not indefiniteness.

C. Office Action Item #8 - rejection of claims 21, 22, 25-38 by Maekawa (5,133,802)

With respect to claim 21, the independent claim, it calls for 2 parts: (a) a working fluid and (b) at least one washing additive. Furthermore, the working fluid also has certain expressed adjectives: non-reactive, non-aqueous, non-oleophilic, and apolar. As it is axiomatic in anticipation law, the prior art must teach each element of the claimed invention. It is also axiomatic that the burden of proving the existence of each element of the claimed invention in the prior art rests squarely on the Examiner as the preamble to section 102 unequivocally states that the applicants "shall be entitled to a patent unless..."

Per Item #10, the examiner asserts that the fluorinated solvent is the "working fluid" but has failed to show by any sound scientific evidence that the recited fluorinated solvents possess

the list of required adjectival properties claimed. No evidence is proffered to show that the fluorinated solvent is non-reactive, non-aqueous, non-oleophilic, and apolar. It is well established that the fact a certain result or characteristic may occur in the art does not establish that it does occur in the art. *In Re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). Concerns over breadth of the claim is of no relevance to the Patent Office unless the Office can demonstrate that the broad claim is anticipated. See, e.g., *In Re Marzocchi*, 439 F.2d 220, 169 USPQ 367, 369 (CCPA 1971). The plain burden is on the examiner to show a working fluid that possesses all the claimed attributes.

Per Item #11, the applicants note that Maekawa does not teach parameters of claim 27. First the applicants note that it is unclear to which element of the claim the Examiner's statement, "Maekawa further teaches the dilution of these compositions with water..." refer. The applicants are unsure whether "these compositions" refer to the ultimately claimed composition, element (a) - working fluid, or element (b) - washing additive. The applicants specifically note that the working fluid itself non-aqueous. Maekawa fails to teach which element may be diluted in water and then whether that dilution would create the change in the parameters claimed in claim 27.

Per Item #12, the applicants disagree completely that the prior art has met all the compositional limitations of claim 21 and thus inherently teach all the parameter claims in various dependent claims. It has yet to be shown that any prior art actually scientifically meets any of the claimed limitations. Furthermore, the applicants dispute whether there is any truth (versus speculation or conjecture) that millions of compounds would meet the limitations of claim 21 and thus inherently possess the dependently claimed properties. As stated earlier, the burden rests solely on the Examiner to find just one of the millions to render the claimed

invention anticipated. It must be shown that not only must that art be a working fluid, it must have each of the four preceding adjectives and then also include a washing additive.

The applicants also disagree with the Examiner's assertion that the existence of the species in claim 22 renders anticipated the genus of claim 21. The applicants note for example that even Maekawa fails to teach a compound recited in claim 22. For example, the perfluoroalkyl group taught in Maekawa is an aqueous dispersion. Thus this compound might be a perfluorocarbon, but is not a nonaqueous perfluorocarbon as claimed. It is further noted that the oft discussed fluorinated pitch relied on by the Examiner is in fact a solid, not a fluid.

With particular reference to claim 26, Maekawa fails to teach a co-solvent. As claimed, the ultimate composition would comprise the working fluid, the washing additive, and the co-solvent. No individual discussion of claim 26 is present in the rejection. To the extent that a rejection of claim 26 exists in the general rejection, the applicants deny the same.

Certainly, claim 28 is not anticipated as Maekawa clearly teaches that his additive (as indicated by the Examiner) is a solid. Even assuming the Examiner switched positions to assert that the pitch is now the working fluid, then the working fluid as claimed is a liquid and not as a solid as shown in the art.

With respect to claim 29, the applicants note that the specific surface tension recited in the claim applies to the working fluid surface tension. Maekawa teaches a surface tension related to the additive as the Examiner asserts the fluorinated pitch to be the additive.

With respect to the remaining claims, the applicants argue the individual patentability of each dependent claim. In general, none of parameters are taught in the art. The art fails to teach even a parameter inherently. The burden remains on the Examiner to find a parameter in the art and then properly apply it to the claims.

C. Office Action Item #13 - rejection of claims 21-39 by Jackson (4,004,048)

To the extent necessary, the applicants restate the above arguments here. The applicants also note that the chemicals recited in Jackson are fixation agents (either surface or subsurface fixation agents). That is they are intended and specifically noted to be reactive with the underlying fabric. The means that any chemical intended to be reactive cannot be at the same time non-reactive. Non-reactivity is a specifically claimed element of the working fluid. Accordingly, despite the recitation of some chemicals in Jackson, those do not anticipate the claimed invention as a whole. It is also worth noting that the very reason Jackson uses his chemicals is to react vigorously with the underlying fabric which is the very antithesis of the present invention. Accordingly, there is no presumptive obviousness of the claimed invention either.

For claim 22, Jackson fails to anticipate because the Examiner has not shown that the recited chemicals in Jackson possess the properties claimed in claim 21. It is not enough that the Examiner find any generic perfluorocarbon, hydrofluoroether, fluorinated hydrocarbon, or fluoroinert. Rather the particular perfluorocarbon, hydrofluoroether, fluorinated hydrocarbon, or fluoroinert must have the properties recited in claim 21.

For claim 23, the applicants restate its arguments for claim 21/22 here as applied to claim 23.

For claim 24, Jackson fails to teach any washing additive of the group identified. It certainly does not teach surfactants, enzymes, bleaches, etc which would all contribute to the inability of the fixation agent to fix itself to the fabric. There is no mention of any of the listed washing additives in Jackson.

For claim 25, as there is no mention of the claimed working fluid, there can be no mention of the mixing of this working fluid with the washing additive.

For claim 26, Jackson fails to teach any co-solvent from the recited group. It does not teach the co-solvent being added to the claimed working fluid to form the mixture.

For claim 27, there is no mention of parameter changing agents that change a parameter of the working fluid.

For claims 27-38, the applicants disagree with the Examiner's assertions that the parameters listed are inherently found in the recited art. It has been shown that the recited Jackson compounds are not the same as the claimed compounds and thus cannot inherently share the same claimed parameters.

For claims 37 and 38, the applicants specifically note that that the Jackson chemicals are very reactive as the very purpose of the Jackson chemicals are to react with the fabrics and embed themselves into the lacunae of the fibres. The applicants also dispute that Jackson teaches "washing conditions" as recited in claim 37.

D. Office Action Item #18 - rejection of claims 21-38 by Tomoyasu (JP 405064521A, published 19 March 1993)

The applicants restate the arguments made above, including with respective individual claims, herein.

The applicants note that the working fluid is in water and thus makes it aqueous. A specific requirement is that the claimed working fluid is non aqueous. To the extent that the water could be considered as a washing additive, the new claims call for a nonaqueous washing additive.

With respect to the individual claims claiming parameters, the applicants note that it has not been shown that the perfluorotripentylamine is a working fluid (as claimed in claim 21)

possessing the claimed properties, and then whether this chemical has the parameters dependently claimed.

E. New Claims

New claim 40 also adds a new limitation that the washing additive is nonaqueous. For the reasons identified above, none of the prior art teaches a washing additive, much less that any washing additive is non aqueous. Dependent claims therefrom also are allowable.

New claims also submitted directed to, *inter alia*, the washing machine containing the working fluid and wash additive. Some new claims are directed to the clothes interspersed with the fluids. For the above reasons, none of the cited art teaches the fluids in a washing machine (as opposed to a dyeing machine) or interspersed non reactively with the clothes. Tomoyasu of course is directed to plant growth chemistry. Jackson is directed to fixing agents on the fabrics, not to wash them, but to react with them. The same is true for Maekawa.

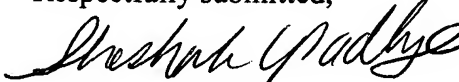
Conclusion

The applicants respectfully request withdrawal of the rejections and believe that the claims as presented represent allowable subject matter. But if the Examiner desires, the applicant is ready for a telephone interview to expedite prosecution. As always, the Examiner is free to call the undersigned at 312-876-2622. The Examiner's attention is also drawn to the new correspondence address.

Date: 27 Sept, 2002

SONNENSCHN NATH & ROSENTHAL
PO Box 061080
Wacker Drive Station, Sears Tower
Chicago, IL 60606-1080
312-876-2622
312-876-7934 (fax)

Respectfully submitted,



Shashank Upadhye
Reg. No. 48,209

In the United States Patent and Trademark Office

Inventor:	Estes et al.)	Examiner: G. Webb
)	
Serial No.:	10/027,160)	
)	Group Unit: 1751
)	
Title:	Non Aqueous Washing Apparatus and ...)	
)	
Atty. Docket No.	9793070-0439)	

Supplemental Response "A" to First Non-Final Office Action

In response to the Notice of Non Compliance 16 Sept. 2002, and in reference to the Non-Final Office Action dated 25 April 2002, the applicants respond as follows.

Version Showing Marked Up Changes

A. In the Specification:

Please replace the paragraph beginning on page 11, line 1, with the following rewritten paragraph:

--FIGS. 4-12 and 15 illustrate various methods of washing fabrics in accordance with the present invention. For definitional purposes, a fluid that possesses no deterative properties similar to those properties found in conventional detergents, dry cleaning agents and liquefied carbon dioxide will hereinafter be referred to as an ideal working fluid (IWF). Examples of IWFs that can be utilized with the methods and apparatuses of the present invention include fluoroinerts, hydrofluoroethers, perfluorocarbons and similarly fluorinated hydrocarbons.--

Please replace the paragraph beginning on page 18, spanning lines 19 to 25, with the following paragraph:

-- As noted above, one family of chemicals particularly suited for use as IWFs in the methods and apparatuses of the present invention are "fluoroinert" liquids. Fluoroinert liquids have unusual properties [which] that make them particularly useful as IWFs. Specifically, the liquids are clear, colorless, odorless and non-flammable. Fluoroinerts differ from one another primarily in boiling points and pour points. Boiling points range from [a] about 56°C. to about 253°C. The pour points typically range from about 30°C. to about -115°C.

Please replace the paragraph beginning on page 21, line 4, with the following rewritten paragraph:

--As indicated above in FIGS. 4-12 and 15, tumbling of the fabric, IWF and any additives including performance enhancers and co-solvents in the washing chamber is a suitable method of transferring mass, i.e. soils, from the fabric to the IWF and/or co-solvent. Other methods of mass transfer include rinsing, centrifugation, shaking, wiping, dumping, mixing and wave generation.--

Please replace the paragraph beginning on page 21, line 9, with the following rewritten paragraph:

--Also, as indicated above in FIGS. 4-12 and 15, the application of air is a suitable method of dehydration or drying the fabric. Other methods of drying may employ centrifugation, liquid extraction, the application of a vacuum, the application of forced heated air, the application of pressurized air, simply allowing gravity to draw the IWF away from the fabric and the application of a moisture absorbing material.--

Please replace the paragraph beginning on page 21, line 14, with the following rewritten paragraph:

--As indicated above in FIGS. 4-12 and 15, the IWF and co-solvents may be recovered through the use of gravity separation, filtration and centrifugation. In addition, de-watering, scrubbing, vaporization, phase inversion and the application of an induced electrical field may be used in recovery and purification of the IWF and co-solvents.--

B. In the Claims:

21. A wash liquor composition for use in laundering a fabric load comprising:
- a) a non-reactive, non-aqueous, non-oleophilic, apolar working fluid, and
 - b) at least one washing additive.
22. The composition of Claim 21 wherein the working fluid comprises a fluorine-containing compound selected from the group consisting of perfluorocarbons, hydrofluoroethers, fluorinated hydrocarbons, and fluoroinerts.
23. The composition of Claim 22 wherein the fluorine-containing compound is $(CF_3(CF_2)_n)_3N$, where n is an integer from 4 to 20.
24. The composition of Claim 21 wherein the washing additive is selected from the group consisting of surfactants, enzymes, bleaches, ozone, ultraviolet light, hydrophobic solvents, hydrophilic solvents, deodorizers, fragrances, antistatic agents, antistain agents, and mixtures thereof.
25. The composition of Claim 24 wherein the washing additive is individually mixed with the working fluid.
26. The composition of Claim 21 which further comprises a co-solvent added to the working fluid to form a mixture, wherein the co-solvent is selected from the group consisting of water, alcohols, ethers, glycols, esters, ketones, and aldehydes, and wherein the mixture is sufficiently stable for a fabric washing application.
27. The composition of Claim 25 further comprising agents to further effect a change in at least one physical parameter of the working fluid, wherein the at least one physical parameter is selected from the group consisting of pH, ionic strength, conductivity, or polarity.
28. The composition of Claim 21 wherein the working fluid is a liquid.

29. The composition of Claim 21 wherein the working fluid has a surface tension of less than or equal to 35 dynes/cm².

30. The composition of Claim 21 wherein the working fluid has an oil solvency greater than water without being oleophilic.

31. (Amended) The composition of Claim 30 wherein the oil-solvency KB is less than or equal to 30.~~KB~~.

32. The composition of Claim 21 wherein the working fluid has a solubility in water of less than about 10%.

33. The composition of Claim 21 wherein the working fluid has a viscosity less than water under normal washing conditions.

34. The composition of Claim 21 wherein the working fluid has a pH from about 6.0 to about 8.0.

35. The composition of Claim 21 wherein the working fluid has a vapor pressure less than the vapor pressure of water.

36. The composition of Claim 21 wherein the working fluid has a flash point of greater than or equal to 145 °C.

37. The composition of Claim 21 wherein the working fluid is substantially non-reactive under washing conditions.

38. The composition of Claim 21 wherein the working fluid is substantially non-swelling to natural fabrics in the fabric load.

39. The composition of Claim 21 wherein the working fluid is hydrofluoroether.

40. (new) A wash liquor composition for use in laundering a fabric load comprising:
a) a non-reactive, non-aqueous, non-oleophilic, apolar working fluid, and
b) at least one non aqueous washing additive.
41. (new) The composition of Claim 40, wherein the working fluid comprises a fluorine-containing compound selected from the group consisting of perfluorocarbon, hydrofluoroether, fluorinated hydrocarbon, and fluoroinert.
42. (new) The composition of Claim 41, wherein the fluorine-containing compound is $(CF_3(CF_2)_n)_3N$, where n is an integer from 4 to 20.
43. (new) The composition of Claim 40, wherein the non aqueous washing additive is selected from the group consisting of surfactant, enzyme, bleach, ozone, ultraviolet light, hydrophobic solvent, hydrophilic solvent, deodorizer, fragrance, antistatic agent, antistain agent, and mixtures thereof.
44. (new) The composition of Claim 43, wherein the washing additive is individually mixed with the working fluid.
45. (new) The composition of Claim 40, which further comprises a co-solvent added to the working fluid to form a mixture, wherein the co-solvent is selected from the group consisting of water, alcohol, ether, glycol, ester, ketone, and aldehyde, and wherein the mixture is sufficiently stable for a fabric washing application.
46. (new) The composition of Claim 45 further comprising agents to further effect a change in at least one physical parameter of the working fluid, wherein the at least one physical parameter is selected from the group consisting of pH, ionic strength, conductivity, or polarity.
47. (new) The composition of Claim 40, wherein the working fluid is a liquid.
48. (new) The composition of Claim 40,

(c) wherein the working fluid has a surface tension of less than or equal to 35 dynes/cm²;

(d) wherein the working fluid has an oil solvency greater than water without being oleophilic, and the KB is less than or equal to 30;

(e) wherein the working fluid has a solubility in water of less than about 10%;

(f) wherein the working fluid has a viscosity less than water under normal washing conditions;

(g) wherein the working fluid has a pH from about 6.0 to about 8.0;

(h) wherein the working fluid has a vapor pressure less than the vapor pressure of water; and

(i) wherein the working fluid has a flash point of greater than or equal to 145 °C;

49. (new) The composition of claim 48, wherein the working fluid is substantially non-reactive under washing conditions.

50. (new) The composition of Claim 48, wherein the working fluid is substantially non-swelling to natural fabrics in the fabric load.

51. (new) The composition of Claim 40, wherein the working fluid is hydrofluoroether.

52. (new) The composition of claim 48, wherein the working fluid is hydrofluoroether.

53. (new) A wash liquor composition for use in laundering a fabric load comprising:

a) a non-reactive, non-aqueous, non-oleophilic, apolar working fluid;

b) at least one washing additive; and

c) a laundering machine.

54 (new) The composition of Claim 53, wherein the working fluid comprises a fluorine-containing compound selected from the group consisting of perfluorocarbon, hydrofluoroether, fluorinated hydrocarbon, and fluoroinert.

55. (new) The composition of Claim 54, wherein the fluorine-containing compound is $(CF_3(CF_2)_n)_3N$, where n is an integer from 4 to 20.

56. (new) The composition of Claim 53, wherein the non aqueous washing additive is selected from the group consisting of surfactant, enzyme, bleach, ozone, ultraviolet light, hydrophobic solvent, hydrophilic solvent, deodorizer, fragrance, antistatic agent, antistain agent, and mixtures thereof.

57. (new) The composition of Claim 56, wherein the washing additive is individually mixed with the working fluid.

58. (new) The composition of Claim 53, which further comprises a co-solvent added to the working fluid to form a mixture, wherein the co-solvent is selected from the group consisting of water, alcohol, ether, glycol, ester, ketone, and aldehyde, and wherein the mixture is sufficiently stable for a fabric washing application.

59. (new) The composition of Claim 53, further comprising agents to further effect a change in at least one physical parameter of the working fluid, wherein the at least one physical parameter is selected from the group consisting of pH, ionic strength, conductivity, or polarity.

60. (new) The composition of Claim 53, wherein the working fluid is a liquid.

61. (new) The composition of Claim 53,
- (d) wherein the working fluid has a surface tension of less than or equal to 35 dynes/cm²;
 - (e) wherein the working fluid has an oil solvency greater than water without being oleophilic, and the KB is less than or equal to 30;
 - (f) wherein the working fluid has a solubility in water of less than about 10%;
 - (g) wherein the working fluid has a viscosity less than water under normal washing conditions;
 - (h) wherein the working fluid has a pH from about 6.0 to about 8.0;

(i) wherein the working fluid has a vapor pressure less than the vapor pressure of water; and

(j) wherein the working fluid has a flash point of greater than or equal to 145 °C;

62. (new) The composition of Claim 61, wherein the working fluid is substantially non-reactive under washing conditions.

63. (new) The composition of Claim 61, wherein the working fluid is substantially non-swelling to natural fabrics in the fabric load.

64. (new) The composition of Claim 53, wherein the working fluid is hydrofluoroether.

65. (new) The composition of Claim 61, wherein the working fluid is hydrofluoroether.

66. (new) A wash liquor composition for use in laundering a fabric load comprising:
a) a non-reactive, non-aqueous, non-oleophilic, apolar working fluid;
b) at least one washing additive; and
c) at least one article of clothing interspersed non reactively with the working fluid and the at least one washing additive.

67. (new) The composition of Claim 66, wherein the working fluid comprises a fluorine-containing compound selected from the group consisting of perfluorocarbon, hydrofluoroether, fluorinated hydrocarbon, and fluoroinert.

68. (new) The composition of Claim 67, wherein the fluorine-containing compound is $(CF_3(CF_2)_n)_3N$, where n is an integer from 4 to 20.

69. (new) The composition of Claim 66, wherein the non aqueous washing additive is selected from the group consisting of surfactant, enzyme, bleach, ozone, ultraviolet light,

hydrophobic solvent, hydrophilic solvent, deodorizer, fragrance, antistatic agent, antistain agent, and mixtures thereof.

70. (new) The composition of Claim 69, wherein the washing additive is individually mixed with the working fluid.

71. (new) The composition of Claim 66, which further comprises a co-solvent added to the working fluid to form a mixture, wherein the co-solvent is selected from the group consisting of water, alcohol, ether, glycol, ester, ketone, and aldehyde, and wherein the mixture is sufficiently stable for a fabric washing application.

72. (new) The composition of Claim 66, further comprising agents to further effect a change in at least one physical parameter of the working fluid, wherein the at least one physical parameter is selected from the group consisting of pH, ionic strength, conductivity, or polarity.

73. (new) The composition of Claim 66, wherein the working fluid is a liquid.

74. (new) The composition of Claim 66,
(d) wherein the working fluid has a surface tension of less than or equal to 35 dynes/cm²;
(e) wherein the working fluid has an oil solvency greater than water without being oleophilic, and the KB is less than or equal to 30;
(f) wherein the working fluid has a solubility in water of less than about 10%;
(g) wherein the working fluid has a viscosity less than water under normal washing conditions;
(h) wherein the working fluid has a pH from about 6.0 to about 8.0;
(i) wherein the working fluid has a vapor pressure less than the vapor pressure of water; and
(j) wherein the working fluid has a flash point of greater than or equal to 145 °C;

75. (new) The composition of Claim 74, wherein the working fluid is substantially non-reactive under washing conditions.

76. (new) The composition of Claim 74, wherein the working fluid is substantially non-swelling to natural fabrics in the fabric load.

77. (new) The composition of Claim 66, wherein the working fluid is hydrofluoroether.

78. (new) The composition of claim 74, wherein the working fluid is hydrofluoroether.